

CONTRIBUTION TO THE KNOWLEDGE OF ANTHOCORIDAE FROM JAPAN AND ITS ADJACENT TERRITORIES (HEMIPTERA-HETEROPTERA) 2.*

Isamu HIURA

The Osaka Museum of Natural History

In preparing this report the author is indebted to Mr. Yorio MIYATAKE, Mr. Masaomi SAKURAI, Mr. Masatomi MIYAMOTO, Mr. Ryohei SAKAMAKI, Mr. Kinzo OGINO, Mr. Osamu SATO, Mr. Yasuhiko HAYASHI, Mr. Kunio FUJITA, Mr. Yasuhiko SHIBATA, and Professor Choku TAKEYA, for their assistance in materials, besides the gentlemen mentioned in the first report. He also express his hearty thanks to Dr. J. CARAYON of Museum National d'Histoire Naturelle, Paris and to Dr. R. I. SAILER of United States Department of Agriculture, Washington, for their advices on the treatment of *Cardiastethus macilentus* which was described as a new species by the author in 1958. Particular thanks are due to Proffessor Syôiti MIYAMOTO for his constant aid and guidance. Thanks are also due to Professor Keizo YASUMATSU for giving a chance to examine the many specimens in the collection of the Entomological Laboratory of Kyushu University and his kind encouragement; and to Mr. Katsura MORIMOTO, Mr. Hitoshi HASEGAWA and Mr. Masao HAYASHI, for their kind help in researching the bibliography, especially on "*Anthocoris nigriscens* MATSUMURA".

Genus *Cardiastethus* FIEBER, 1860 (Dufouriellinae)

Six species of this genus have been recorded from the Far East; *C. laeviusculus* POPPIUS (Formosa), *C. longipes* POPPIUS (Formosa), *C. pygmaeus* POPPIUS (Formosa and Tonkin), *C. obscuriceps* POPPIUS (Japan), *C. morimotoi* HIURA (Japan) and *C. macilentus* HIURA (Japan). The last species is synonymized with *C. fulvescens* (WALKER). Recently CARAYON (1958) suggested that *C. fulvescens* and its allies were different from the remainders of the genus in the structures of hemielytra and thorax, especially in the bifurcated process of metasternum; the genus *Amphiareus* DISTANT which was denied by POPPIUS (1909) and his followers must be treated as the sub-genus of *Cardiastethus*. According to this opinion, three species of Japanese *Cardi-*

* Contribution from the Osaka Museum of Natural History, no. 57

昭和34年度文部省科学研究費(奨励研究)の交付による研究

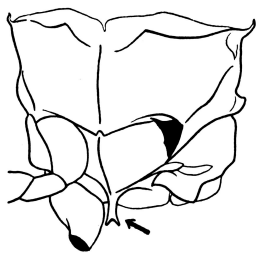


Fig. 1 Ventral view of the meso- and metathorax of *Amphiareus obscuriceps* POPPIUS, showing the bifurcated projection of metasternum.

astethus belong to the subgenus. But by the distinct structural characters, especially by metathoracic bifurcated projection (fig. 1) and male genitalia (figs. 3A-E), the subgenus should be raised to the rank of genus.

***Cardiastethus pygmaeus pygmaeus* POPPIUS, 1914**

(figs. 2, 3A)

"Keshi-Hanakamemushi"

1914 *Cardiastethus pygmaeus* POPPIUS, Arch. Nat., 80 (8) 7.

1926 *Cardiastethus pygmaeus* ESAKI, Ann. Mus. Nat. Hung., 26 (179) 170.

1957 *Cardiastethus pygmaeus* CARAYON, Ann. Soc. Ent. France, vol. 126, pp. 167-176.

Distribution:- Formosa (Anping), Tonkin and Africa (subsp. *pauliani* LANSBURY)

Specimens examined:- Formosa: 2 ♀, Taihoku, 18. v. 1946, S. MIYAMOTO leg.

Kyushu: 1 ♀, Kurume-city, 8. ix. 1955, S. MIYAMOTO leg.; 1 ♂ 1 ♀, Hakozaki, Fukuoka-city, 22. iv. 1954, T. HIDAKA leg.; 1 ♀, 15. ix. 1953, M. TAKAHASHI leg.; 2 ♀, Harumachi, near Fukuoka-city, 20. viii. 1948; 1 ♀, 19. viii. 1948; 1 ♀, 30. vii. 1948, S. MIYAMOTO leg.; 2 ♀, T. YOSHIDA leg.; 1 ♀, 21. xii. 1953, I. HIURA leg.; 1 ♀, Kashii, Fukuoka-city, 1. ix. 1957, T. HIDAKA leg.; 1 ♀, Shikanoshima, Hakata-Bay, 24. v. 1953, K. MORIMOTO leg.; 1 ♀, Mt. Wakasugi near Fukuoka-city, 10. xii. 1955, K. MORIMOTO leg.; 1 ♀, 1. iv. 1959, Y. MIYATAKE leg.; 1 ♂, Fukuoka-city, 22. vi. 1958; 1 ♀, 14. x. 1958; 1 ♀, 21. viii. 1958; 1 ♀, 22. viii. 1957; 1 ♂, 11. vi. 1957, S. MIYAMOTO leg.; 1 ♀, Daimyo-machi, Kokura-city, 1. ix. 1940, A. KIRA leg.

Shikoku: 1 ♀, Uetsuno, Jinryō-vil., Tokushima-pref., 16. vii. 1953; 1 ♀, 27. vii. 1953; 1 ♀, 18. viii. 1953, I. HIURA leg.; 1 ♂, Kawauchi-vil., Tokushima-city, 31. viii. 1956, I. HIURA leg.

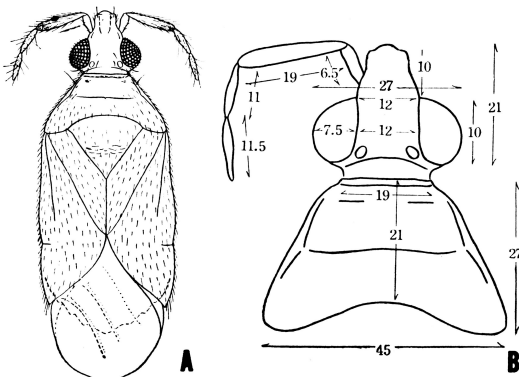
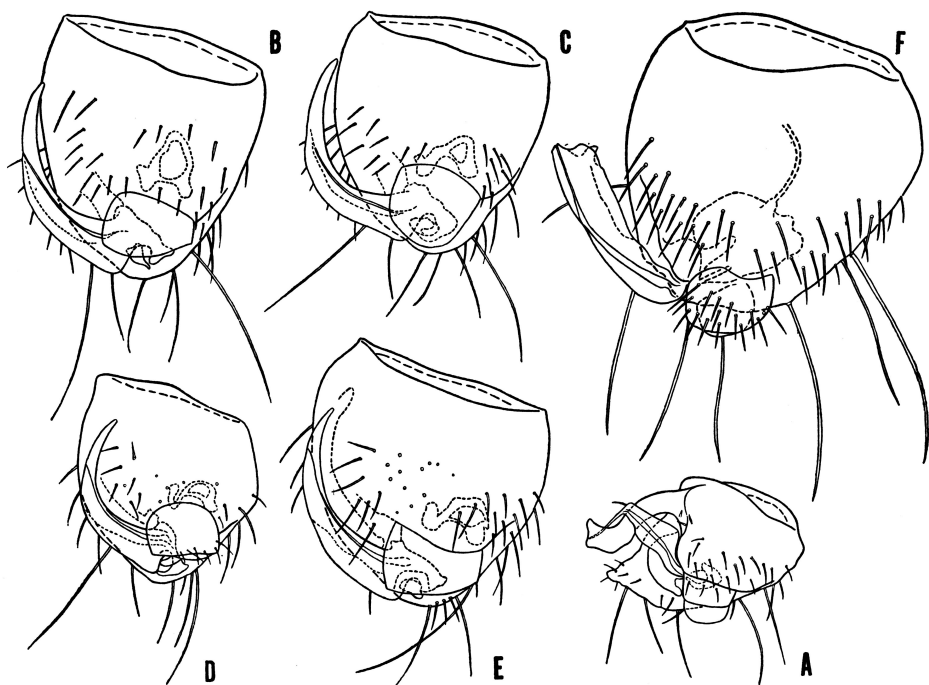


Fig. 2 Japanese specimens of *Cardiastethus pygmaeus pygmaeus* POPPIUS (A), and its proportions of detailed parts (B) (80 units = 1 mm.)

Honshu: 4 ♀, Otsu-vil., Hinokawa-gun, Shimane-pref., 15. xii. 1932, N. SUKEGEN leg.; 1 ♀, Hôgi-cho, Kedaka-gun, Tottori-pref., 22. x. 1959, I. HIURA leg.; 1 ♀, Takarazuka-city, Hyogo-pref., 4. ix. 1958; 1 ♀, 11. ix. 1958; 1 ♀, 29. ix. 1958, S. MIZOGUCHI leg.; 1 ♂ 13 ♀, Shimada, Toyonaka-city, Osaka, 16. x. 1959, I. HIURA leg.; 1 ♀, Hanaten-cho, Osaka-city, 16. x. 1957, Y. OKADA leg.; 1 ♀, Ôiso, Kanagawa-pref., 17. vi. 1941, H. HA-

SEGAWA leg.; 1 ex., Suginami, Tokyo, 14. ix. 1949; 1 ex., 15. i. 1948, M. TAKAHASHI leg.

Habits:—The bug lives in the vegetable garden (e.g. cucumber and “Nasu”, *Solanum melongena*), piles of harvested stems and leaves (e. g. soy-bean, broad-bean, rice-plant and Nasu), and it is attracted to light at night. The insect overwinters under the bark (e. g. grape). S. MIYAMOTO observed that this bug lived beneath leaf-sheath of “Susuki” grass, *Micanthus* sp., and was predaceous on young larvae of a Lygaeid bug, *Blissus japonicus* HIDAOKA (“Kobane-Naga-Kamemushi”) which was a pest of the grass. H. FUKUDA observed that the bug emerged from the wax secreted by the male of the Chinese Wax Scale, *Ericerus pela* (“Ibotarô-Katakagaramushi”).



Figs. 3 Male genital segments. Fig. A *Cardiastethus pygmaeus pygmaeus* POPPIUS (Osaka-pref.). Fig. B *Amphiareus fulvescens* WALKER (Mie-pref.). Fig. C “*Poronotellus constrictus* STÅL (San Francisco, California, U.S.A.). Fig. D *Amphiareus morimotoi* HIURA (Tottori-pref.). Fig. E *Amphiareus obscuriceps* POPPIUS (Shiga-pref.). Fig. F *Lasiochiloides esakii* HIURA, n. sp. (Tokunoshima, Ryukyu).

Genus *Amphiareus* DISTANT, 1904 (Defouriellinae)

***Amphiareus fulvescens* (WALKER, 1872) (figs. 3B, 3C)**

“Hosomi-Yasa-Hanakamemushi”

= ? “*Xylocoris*” *constrictus* STÅL

1872 *Xylocoris fulvescens* WALKER, Cat. Heteropt. Brit. Mus., V, p. 160

- 1896 *Xylocoris (Cardiastethus?) fulvesceas* LETHIERRY et SEVERIN, Cat. Gen. Hem., III, p. 250
 1904 *Amphiareus fulvescens* DISTANT, Ann. Mag. Nat. Hist., 14(7) 220
 1906 *Amphiareus fulvescens* DISTANT, Faun. Brit. India, Rhynchota, vol. 3, p. 4
 1909 *Cardiastethus fulvescens* POPPIUS, Act. Soc. Sci. Fennicae, 37(9) 19
 1910 *Amphiareus fulvescens* DISTANT, Faun. Brit. India, Rynchota, vol. 5, p. 300
 1946 *Cardiastethus fulvescens* USINGER, Ins. Guam, vol. 2
 1948 *Cardiastethus fulvescens* ZIMMERMAN, Ins. Hawaii, vol. 3
 1958 *Cardiastethus (Amphiareus) fulvescens* CARAYON, Mem. Inst. Sci. Madagascar, ser. E, vol. 9, pp. 344-345
 1958 *Cardiastethus macilentus* HIURA, Ent. Rev. Japan, 9(2) 39-40

Distribution:- Tropical Africa, Madagascar, Comoro Is., Ceylon, Burma, Bhamo, Malacca, Singapore, Sumatra, Engano Is., Celebes, New Guinea, Hawaii, Guam Is., and Japan (Kôchi, Kagawa, Tokushima, Hyogo, Fukuoka and Kagoshima)

Specimens examined:- Bonin Is.; 1 ex., Chichijima, 19-21. vii. 1940, T. KITAMURA leg.

Formosa: 1 ♀, Kahodai, Hassenzan, Taichu, 11-13. vii. 1932, T. ESAKI leg.; 1 ♀, Taihoku, 10. v. 1941; 1 ♀, 1. iv. 1947, S. MIYAMOTO leg.; 2 exs., Keibi, Taihoku, 1-2. v. 1941, Y. KURIYA leg.

Kyushu: 1 ♀, Mt. Tachibana near Fukuoka-city, 28. x. 1954, K. MORIMOTO leg.; 1 ♀, Harumachi near Fukuoka-city, 20. viii. 1948, S. MIYAMOTO leg.; 1 ♀, Fukuoka-city, 15. ix. 1935, S. HASHIMOTO leg.

Shikoku: 1 ♀, Jinzenji, Kôchi-city, 15. vii. 1953; 1 ♀, 21. vii. 1953, K. MORIMOTO leg.; 1 ♀, Fujinoike, Mt. Tsurugi, 21. vii. 1959, Y. NISHIOKA leg.

Honshu: 1 ♀, Wakayama-city, 21. ix. 1957, I. HIURA leg.; 1 ♂ 2 ♀, Mt. Asama, Futamimachi, Mie-pref., 11. xi. 1958, I. HIURA leg.; 1 ♂, Shizen' en, Tokyo, 4. ix. 1954, H. HASEGAWA leg.

Habits:- The bug lives in the piles of harvested stems and leaves (e. g. wheat, sweetpotato-vine), fire-wood, and sometimes is attracted to light at night. The author captured a specimen flew into the cabin of passenger boat touching port. In Guam, it was obtained from dead orange twigs.

Taxonomic notes:- According to R. I. SAILER (in litt.), the author's *Cardiastethus macilentus* has a close resemblance to *Poronotellus constrictus* (STÅL) what appears to be widely distributed in the Neotropical region, including Hawaii and Hongkong, China, and in Hawaii it was treated by ZIMMERMAN under the name *Poronotellus sodalis* (WHITE).

The author had a chance to compare a pair of American specimens (San Francisco, Calif., U.S.A.), determined by R. I. SAILER as *Poronotellus constrictus*, with the author's *Cardiastethus macilentus* (= *Amphiareus fulvescens*) (figs. 3B and 3C). The result revealed that they were conspecific. ZIMMERMAN (1948) recorded both *Poronotellus*

sodalis (WHITE) and *Cardiastethus fulvescens* (WALKER) from Hawaii. Thus, there are some confusions about the name of this species.

Poronotellus constrictus and its allies have been treated by the different entomologists under the various names. It was originally described by STÅL (1858) under the name of *Xylocoris constrictus*. Although REUTER (1871) established the genus *Poronotus* based on *costrictus* STÅL and *discifer* REUTER, he (1884) considered *Poronotus constrictus* synonymous with *Astenidea pallescens*, while he transferred *discifer* REUTER into the genus *Cardiastethus*; on the other hand he established a new genus *Buchananiella* based on *sodalis* WHITE, *continua* WHITE and *whitei* REUTER. CHAMPION (1900) proposed again the genus *Poronotus* for *constrictus* STÅL because it was able to distinguish from *Astenidea pallescens* (*Astenidea* belongs to subfamily Lyctocorinae!). But KIRKALDY (1904) gave the new name *Poronotellus* for *Poronotus* (REUTER) CHAMPION without description. POPPIUS (1909) revived the name of *Poronotus* and thought it containing the following species, *sodalis* WHITE, *continuus* WHITE, *whitei* REUTER, *constrictus* STÅL and *bicolor* POPPIUS. Most of the hemipterists considered that the correct name of this group was not *Poronotus* and *Buchananiella*, but *Poronotellus*. Recently CARAYON (1958) used again the generic name of *Buchananiella*.

Judging from the CARAYON's and GROSS's (1957) figures of male genitalia, *continuus* WHITE, *anulatus* CARAYON, *sodalis* WHITE and *whitei* REUTER must be placed into the same one genus whatever correct name for the genus may be. But so-called *constrictus* STÅL and oriental *Amphiareus* spp. must be treated under a different genus from *sodalis*-group, and the generic name of the former group may be *Poronotus* (REUTER) CHAMPION or *Amphiareus* DISTANT. To clear this confusion on generic name, it will be necessary to examine the type specimen of STÅL's "*Xylocoris constrictus*".

***Amphiareus morimotoi* (HIURA, 1958) comb. nov. (fig. 3D.)**

"Morimoto-Yasa-Hanakamemushi"

1958 *Cardiastethus morimotoi* HIURA, Ent. Rev. Japan, 9 (2) 38-39

Distribution:- Japan Shikoku (Kôchi-city)

Specimens examined:- Kyushu: 1 ♂, Ura, Hoshino-vil., Yame-gun, Fukuoka-pref., 15. x. 1959, Y. MIYAKE leg.; 1 ♂, Hirao, Fukuoka-city, 27. v. 1958, Y. MIYATAKE leg.; 1 ♀, Rônindani, Fukuoka-city, 10. ii. 1958, H. HARAGUCHI leg.

Honshu: 1 ♂ 4 ♀, Hôgi-machi, Kedaka-gun, Tottori-pref., 22. x. 1959, I. HIURA leg.; 1 ex., Nose, Osaka-pref., 5. v. 1958, Y. KIMURA leg.; 1 ♂, Mt. Kasuga, Nara-city, 20. x. 1957, Y. OKADA leg.; 1 ♀, Ôyama, Kanagawa-pref., H. HASEGAWA leg.; 1 ♀, Arayama, Yatso-machi, Toyama-pref., 10. x. 1959; 1 ♀, Furusato-vil., Nehi-gun, Toyama-pref., 9. x. 1959, I. HIURA leg.

Habits:- It lives in the piles of harvested stems (e. g. rice-plant) and the fallen leaves of tree (e.g. "Kunugi", *Quercus acutissima*), sometimes in the fire-wood.

***Amphiareus obscuriceps* (POPPIUS, 1909) comb. nov. (figs. 1, 3E)**

"Yasa-Hanakamemushi"

1909 *Cardiastethus obscuriceps* POPPIUS, Act. Soc. Sci. Fennicae, 37 (9) 19-20

1954 *Cardiastethus obscuriceps* HASEGAWA, Scientific Researches of the Ozegahara Moor, p. 751

1957 *Cardiastethus flavescens* MIYAMOTO, Sieboldia, 2 (1) 76

1959 *Cardiastethus obscuriceps* MIYAMOTO, Sieboldia, 2 (2) 123

Distribution:- Japan Honshu (Yokohama, Kanagawa, "Rokkakubashi" and Ozegahara Moor)

Specimens examined:- Kyushu: 1 ♂, Magome, Sata-cape, Kagoshima-pref., 27. v. 1952, ESAKI et HIRASHIMA leg.; 1 ♀, Mt. Kuju, Ōita-pref., 9. iv. 1959, Y. MIYATAKE leg.; 1 ♂, Mt. Sobosan, Ōita-pref., 8. ix. 1953, K. YASUMATSU leg.; 1 ♀, Ukidake, Saga-pref., 30. v. 1958, T. HIDAKA leg.; 1 ♂, Nitabaru, Hoshino-vil., Yame-gun, Fukuoka-pref., 4. xi. 1959; 1 ♂, Ura, Hoshino-vil., 15. x. 1959; 1 ♂ 1 ♀, Hirozō, Hoshino-vil., 2. vii. 1959, Y. MIYAKE leg.; 2 ♀, Mt. Kumado, Yame-gun, Fukuoka-pref., 3. viii. 1959; 1 ♀, 28. vi. 1949, Y. MIYAKE leg.; 2 ♂ 5 ♀, Mt. Kōra, Kurume-city, 1. v. 1955; 1 ♀, 2. v. 1952; 2 ♀, 2. vi. 1955, S. MIYAMOTO leg.; 3 ♂, Mt. Hikosan, 15-16, viii. 1958, Y. MIYATAKE leg.; 1 ♂ 5 ♀, Mt. Wakasugi, near Fukuoka-city, 29. iv. 1959, K. MORIMOTO leg.; 2 ♀, 17. x. 1956, T. HIDAKA leg.; 1 ♀, 31. v. 1959, Y. MIYATAKE leg.; 2 ♂ 2 ♀, Mt. Inunaki, near Fukuoka-city, 24. v. 1958; 1 ♂ 1 ♀, 19. vi. 1957, T. HIDAKA leg.; 1 ♂, 1. ii. 1959; 1 ♀, 20. iv. 1958, Y. MIYATAKE leg.; 3 ♀, 5. v. 1954, K. MORIMOTO leg.; 1 ♀, Mikazukiyama, near Fukuoka-city, 30. vi. 1957, S. MIYAMOTO leg.; 1 ♂, Miyajidake, near Fukuoka-city, 23. iii. 1958, T. HIDAKA leg.; 1 ♀, Mt. Kanayama, 15. vi. 1958, K. MORIMOTO leg.; 1 ♂ 1 ♀, Minamihata-vil., near Fukuoka-city, 20. ix. 1953, I. HIURA leg.; 1 ♂, Aburayama, Fukuoka-city, 17. v. 1958, S. MIYAMOTO leg.; 1 ♂, Hirao, Fukuoka-city, 27. v. 1958, Y. MIYATAKE leg.; 1 ♀, Kōnosuyama, Fukuoka-city, 10. xi. 1953, I. HIURA leg.; 1 ♀, Fukuoka-city, 25. vii. 1952, K. MORIMOTO leg.; 2 ♂, Mt. Fukuchi, Kokura-city, 5. v. 1954; 1 ♀, 8. vii. 1954, T. YOSHIDA leg.; 2 ♂, 29. iv. 1956, T. HIDAKA leg.

Shikoku: 1 ♀, Moshima, Okinoshima-vil, Kōchi-pref., 22. vi. 1953, K. SUGIMOTO leg.; 1 ♂ 1 ♀, 31. vii. 1953, K. MORIMOTO leg.; 15 ♂ 6 ♀, Sugikumadani, Makiyama-vil., Kōchi-pref., 29. viii. 1954, K. MORIMOTO leg.; 3 ♀, Mt. Kuroson, Kōchi-pref., 20. vii. 1957, S. KIMOTO leg.; 1 ♀, Mt. Kajigamori, Kōchi-pref., 10. viii. 1953, C. TAKEYA leg.; 1 ♂ 1 ♀, Jinzenji, Kōchi-city, 29. xii. 1953; 1 ♀, 14. vii. 1953; 2 ♀, 25. viii. 1953; 1 ♂, 21. vii. 1953; 1 ♂, 30. xii. 1953, K. MORIMOTO leg.; 1 ♀, Omogō-valley, Ehime-pref., 3. v. 1958, Y. MIYATAKE leg.; 1 ex., Shōwa-chō, Tokushima-city, 6. viii. 1956, K. OGINO leg.; 1 ♀, Kawai, Koyadaira-vil., Tokushima-pref., 15. vi. 1959; 1 ♂, Jintsū, Kamibun-

kamiyama-vil., Tokushima-pref., 4. viii. 1956; 2♂, Dosu-pass, Sawadani-vil., Tokushima-pref., 4. viii. 1956; 2♂, Tani, Jinryô-vil., Tokushima-pref., 24. viii. 1954; 7♂ 1♀, Kône, Jinryô-vil., 24. viii. 1954; 2♀, Uetsuno, Jinryô-vil., 9. vii. 1958; 1♀, 27. viii. 1954; 5♂ 4♀, 14. vii. 1953; 1♀, 17. vii. 1953; 5♂ 2♀, 16. vii. 1953; 1♂, 28. viii. 1953; 1♀, 30. vii. 1953; 1♂ 1♀, 27. viii. 1953; 1♂ 1♀, 31. viii. 1953; 2♀, 2. viii. 1953; 1♀, 10. viii. 1953; 2♂, 4. viii. 1953; 1♂, 15. viii. 1953; 1♂, 21. vii. 1953; 1 ex., 18. vii. 1953; 1♂, 24. viii. 1953; 1♀, 8. viii. 1953; 1♀, 28. ii. 1953, I. HIURA leg.

Chûgoku, Honshu: 5♂ 1♀, Hôgi-machi, Kedaka-gun, Tottori-pref., 22. x. 1959, I. HIURA leg., 1♀, Yokotemichi, Mt. Daisen, Tottori-pref., 22. vii. 1958; 1 ex., 25. vii. 1958, Y. HAMA leg.; 1♀, Kamomachi, Tomada-gun, Okayama-pref., 26. vii. 1954, S. NAKAO leg.

Kinki, Honshu: 3♂ 1♀, Tada, Nose, Hyôgo-pref., 24. vi. 1959, M. SAKURAI leg.; 3♂ 2♀, Mt. Mayasan, Kôbe-city, 3. ix. 1953, K. MORIMOTO leg.; 1♂, Nishidani, Hyôgo-pref., 16. vii. 1941, M. HANANO leg.; 1♂, Mt. Kôya, Wakayama-pref., 17. vii. 1958, Y. KIMURA leg.; 1♂ 2♀, 3. viii. 1958, I. HIURA leg.; 1♀, Mt. Iwawaki, Osaka-pref., 25. v. 1958, Y. KIMURA leg.; 1♀, 1. vi. 1958, T. SHIBATA leg.; 1♀, 13. vii. 1958, Y. HAMA leg.; 6♂ 11♀, 19. v. 1957, I. HIURA leg.; 4♂ 8♀, 11. v. 1958, Y. OKADA leg.; 1♂ 1♀, 18. viii. 1957, OKADA et HIURA leg.; 1 ex., 26. iv. 1953, O. SATÔ leg.; 3♂ 1♀, Mt. Shigi, Osaka-pref., 26. vi. 1957, I. HIURA leg.; 9♂ 1♀, Shishikutsuji, Kita-kawachigun, Osaka-pref., 13. x. 1958, Y. OKADA leg.; 6 exs., Nose, Osaka-pref., 5. v. 1958, Y. KIMURA leg.; 1♀, Minoo, Osaka-pref., 20. x. 1918, K. TAKEUCHI leg.; 4♂ 5♀, 27. v. 1958, R. SAKAMAKI et O. MIZOKUCHI leg.; 2♂ 6♀, Shakudai, Shimamoto, Mishima-gun, Osaka-pref., 25. v. 1957, K. MIZOKUCHI leg.; 1♂, Mt. Izumikatsuragi, Osaka-pref., 31. v. 1959; 1♀, 7. vi. 1959, M. SAKURAI leg.; 1♂, Mizugamine, Nosegawa-vil., Yoshino-gun, Nara-pref., 31. vii. 1957, Y. SHIBATA leg.; 1♀, Mt. Ohdaigahara, Nara-pref., 3. viii. 1953, T. NAKANE leg.; 2♂, Hikimizu, foot of Mt. Ohdaigahara, 10. viii. 1957, I. HIURA leg.; 1♀, Kawai-Dorogawa, Nara-pref., 12. viii. 1958; 1♂, Dorogawa, 22. vii. 1957, I. HIURA leg.; 2♀, Hasedera, Nara-pref., 17. v. 1958; 1♂, 15. vi. 1958; 1♂, 3. v. 1958, T. SHIBATA leg.; 1♀, Mt. Kasuga, Nara-city, 3. xi. 1958; 1♀, 10. v. 1959, T. SHIBATA leg.; 1♂, 20. x. 1957, Y. OKADA leg.; 1 ex., 16. vi. 1954, K. MATSUMOTO leg.; 1♂, 3. v. 1959, T. TOMIWA leg.; 1♂, Urajiro-pass, Okuyamada-vil., Tsuzuki-gun, Kyôto-pref., 28. i. 1959, I. HIURA leg.; 2♀, Mt. Daihi, Kyôto-pref., 13. v. 1958, T. SHIBATA leg.; 1♀, Kibune, Kyôto-pref., 26. iv. 1959, Y. HAMA leg.; 1♀, 2. v. 1959, T. SHIBATA leg.; 12♂ 14♀, foot of Mt. Ibuki, Shiga-pref., 10. v. 1959, I. HIURA leg.; 1♂, Kitahira-pass, Mt. Hira, Shiga-pref., 2. vi. 1957; 1♂, Yakumogahara Moor, Mt. Hira, 4. vi. 1957, I. HIURA leg.

Chûbu and Kantô, Honshu: 1♂, Lake Matsubarako, Nagano-pref., 30. v. 1941, H. HASEGAWA leg.; 1♀, Ozegahara Moor, 20. ix. 1950, H. HASEGAWA leg.; 1♂, Numata,

Gumma-pref., 7. x. 1953, T. TAKEI leg.; 2 ♀, Kobotoke-pass, Tokyo, 30. iv. 1939, H. HASEGAWA leg.; 1 ♂ 1 ♀, Fuchû, Tokyo, 1. ii. 1950, M. TAKAHASHI leg.; 1 ♂, Setagaya, Tokyo, 20. x. 1958, H. HATTORI leg.; 1 ♂, Nishigahara, Tokyo, 19. vii. 1954; 1 ♀, Shizen'en, Tokyo, 9. vii. 1948, H. HASEGAWA leg.; 1 ♀, Amariyama, Yamanashi-pref. 28. vii. 1956, M. MIYAMOTO leg.

Hokuriku and Tôhoku, Honshu: 2 ♀, Murakuni, Takefu-city, Fukui-pref., 12. viii. 1953, Y. MURAKAMI leg.: 1 ♀, Mt. Noda, near Kanazawa-city, 17. v. 1959, Y. HAYASHI leg.; 7 ♂ 5 ♀, Furusato-vil, Nehi-gun, Toyama-pref., 9. x. 1959; 3 ♂ 4 ♀, Arayama, Yatsuomachi, Toyama-pref., 10. x. 1959; 2 ♂ 1 ♀, Doyama, Nishitonami-gun, Toyama-pref., 14. x. 1959, I. HIURA leg.; 1 ♂, Koiwai, Iwate-pref., 10. x. 1952, T. ESAKI leg.; 1 ♀, Ôyachi, Yajima-machi, Yuri-gun, Akita-pref., 29. vii. 1959, I. HIURA leg.; 1 ♂ 2 ♀, Yunomata, Ôhatamachi, Shimokita, Aomori-pref., 20. vii. 1956, K. MORIMOTO leg.

Hokkaido: 1 ♂ 1 ♀, Engaru-machi, Monbetsu-gun, 11. viii. 1957, K. MORIMOTO leg.; 1 ♀, Ashoro, 25. vii. 1959, K. MORIMOTO leg.

Habits:- This species is commonest among the Japanese Anthocoridae. It is most abundantly found in the fire-wood, but a few in the piles of dead and withered plants, harvested stems and leaves (e. g. rice-plant, sweetpotato-vine, broad-bean, Sasa-grass, "Sugi", *Cryptomeria japonica*, "Hinoki", *Chamaecyparis obtusa*, "Kunugi", and sometimes under the bark. It is attracted to light at night. Y. MIYAKE found a single insect of this species among the *Orius* population in gathering the unripe fruits of "Tsurumasaki", *Evonimus fortunei*. K. MIZOGUCHI obtained many specimens from the deposition of grasses and rubbish along the bank of the River Yodogawa in a flood.

Genus *Scoloposcelis* FIEBER, 1863 (Dufouriellinae)

DISTANT (1904) established the new genera *Ostorodias* and *Sesellius* based upon N. W. Himalayan *O. contubernalis* and tropical Asiatic *Anthocoris parallelus* respectively. Both were allied to the genus *Scoloposcelis* and they could be separated from each other by the structures of femora and pronotum. Shortly later, POPPIUS (1909) denied this opinion and inferred these characters were not generic but specific. To confirm this, it will be needed to examine the detail structures of all described species of this group, especially of the venation of hind wing, armature of legs, and male genitalia. Concerning generic name of the two species, treated here, POPPIUS's opinion is followed. Perhaps, all of this group may attack on Scolytid beetles under bark of dead or half dead tree, or in the galleries of the beetles. DISTANT reported his *Ostorodias contubernalis* was found in the galleries of *Polygraphus* sp. of spruce-fir (*Abies*?) in north western Himalaya.

***Scoloposcelis parallelus* (MOTSCHULSKY, 1863)** (figs. 4E-G, 6A)1863 *Anthocoris parallelus* MOTSCHULSKY, Bull. Soc. Nat. Moscou, 36 (3) 891884 *Anthocoris parallelus* REUTER, Act. Soc. Sci. Fennicae, 14, pp. 717-7181904 *Sesellius parallelus* DISTANT, Ann. Mag. Nat. Hist., 14(7)2221906 *Sesellius parallelus* DISTANT, Faun. Brit. India, Rhynchota, vol. 3, p. 71909 *Scoloposcelis parallelus* POPPIUS, Act. Soc. Sci. Fennicae, 37 (9) 251910 *Scoloposcelis parallelus* POPPIUS, Wien. Ent. Zeitung, 29, p. 1401910 *Sesellius parallelus* DISTANT, Faun. Brit. India, Rhynchota, vol. 5, p. 3041914 *Scoloposcelis parallelus* POPPIUS, Arch. Nat. 80 (8) 91926 *Scoloposcelis parallelus* ESAKI, Ann. Mus. Nat. Hung., 24 (189) 1711946 *Scoloposcelis parallelus* USINGER, Ins. Guam, vol. 21957 *Scoloposcelis parallelus* GROSS, Rec. S. Australian Mus., 13 (1) 1401909 *Scoloposcelis picicornis* POPPIUS, Act. Soc. Sci. Fennicae, 37 (9) 26-27

Distribution:- Tropical Asia; Ceylon, Engano, Mentawai, Aru, Rossel Is., Java, Guam and Formosa (Taihorin near Kagi, Tainan)

Specimens examined:- 1 ♂ 1 ♀, Anko, Taihoku, Formosa, 16. ii. 1941, S. MIYAMOTO leg.; 1 ♂ 1 ♀, Kuraru, Koshun, South Formosa, 25. vii. 1941, A. KIRA leg.; 1 ♂ 1 ♀, Antsun, Formosa, 14. viii. 1941, H. HASEGAWA leg.

Habits:- H. HASEGAWA obtained the specimens from the rotten wood.

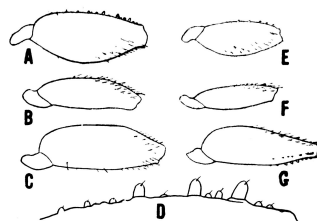


Fig. 4 Femora and trochanters of *Scoloposcelis nigriscens* HARADA (A-D) and *Scoloposcelis parallelus* MOTSCHULSKY (E-G). Fore leg (A,E), Middle leg (B, F), Hind leg (C, G) and Spine of fore leg (D).

***Scoloposcelis nigriscens* (HARADA, 1929) comb. nov.** (figs. 4A-D, 6B)

"Kikui-Hanakamemushi"

1929 *Anthocoris nigriscens* HARADA, Ecological Study on the Scolytid beetles injurious to *Picea jezoensis*, p. 58 (in Japanese)1951 *Anthocoris nigriscens* INOUE, How to exterminate the forest injurious Insects, vol. 1, p. 153 (in Japanese)1940 *Anthocoris confusus* TAMANUKI, (nec REUTER), On the Scolytid beetles injurious to *Picea jezoensis* and *Abies sachalinensis* in Southern Saghalien, p. 46-47 (in Japanese)1943 *Anthocoris confusus* MATSUSHITA (= HARADA), (nec REUTER), Forest Entomology, p. 202 (in Japanese)

Redescription (female):- Colour dark brown. Central part of hemielytra stramineous; embolium, cuneus, outer margin of clavus and base of corium dark brown; membrane greyish; antennae, tips of every femur, tibiae and tarsi brown.

Structure: Body elongate and flattened, upper surface poorly haired. Head sub-columnar, about as long as width including both eyes (63: 60) (measured in 1/120mm.),

and broader than length excepting neck area (60:50) upper surface levigated and shining. Eyes subprominent, inner margins radiate forwards, post-ocular area narrow. Antennae comparatively stout, first segment thickened, not reaching the apex of head; second segment thickened towards the apex, shorter than width of head including both eyes (50:60), apical two segments slender; proportions are I:II:III:IV = 20:50:32:33. Rostrum stout and long, reaching the middle of mesosternum.

Pronotum horizontal, shining, anterior margin a little curved, collar narrow and obsolete, posterior margin widely curved, broader than twice the length of anterior margin (106:48), lateral margins straight and narrowed forwards; anterior half levigated and swollen, posterior half depressed and transversely shallowly strigose. Anterior half of scutellum levigated and swollen, posterior half flattened and strigose. Hemelytra mat, outer 2/3 of clavus and all of corium weakly punctured, but hairs short, reduced, and only visible under microscope; embolium narrow, shorter than twice the length of cuneus (105:60); membrane with three parallel veins; tip and margins of abdomen exposed. Hind wings in the cell with a reduced hamus which is not easy to detect. Fore and hind femora much thickened, middle femora of moderate shape; fore femora spinose beneath, but middle and hind ones without armature (fig. 4A-D). Evaporating area of scent-gland is banana-shaped.

Length, 3.5mm.; width, 1.1 mm.

Closely allied to *Scoloposcelis parallelus* (MOTSCHULSKY), but distinguished from it by the larger size, wider abdomen, more shallowly strigose pronotum and not spinose hind femora,

Distribution:- Southern Saghalien and Hokkaido.

Specimens examined:- 1 ♀, Uriu, Hokkaido, 4. vi. 1935, H. KÔNO leg.; 4 ♀, Keton, Saghalien, 28. vi. 1928, K. TAMANUKI leg.

Taxonomic notes:- Concerning an Anthocorid bug predaceous on Scolytid beetles in Hokkaido and southern Saghalien, there were some confusions on its name. M. HARADA (1929) recorded it from Hokkaido under the name of "*Anthocoris nigriscens* MATSUMURA" which was identified by S. MATSUMURA and accompanied with short description. But no description had been prepared for this species by S. MATSUMURA. So that the first description of this bug is given by HARADA, and the author name of this species is not MATSUMURA but HARADA. On the other hand K. TAMANUKI (1940) recorded the same species from Saghalien under the name of *Anthocoris confusus* REUTER by T. ESAKI's identification. In 1943, M. MATSUSHITA (=M. HARADA) used *A. confusus* as the name of this bug by following TAMANUKI's treatment. The author had a chance to examine five specimens of this bug with the label of "*Anthocoris confusus* REUTER" determined by T. ESAKI, those are preserved in the Entomological Laboratory of Kyushu University. They have a very reduced and

almost invisible hamus in the cell of hind wings. But the species is quite congeneric with *Scoloposcelis* excepting the above mentioned reduced hamus, and closely allied to *S. parallelus* but easily distinguishable from it. Thus, the correct name for this species is considered as *Scoloposcelis nigriscens* (HARADA).

Habits:— According to HARADA and TAMANUKI, the habits of this bug are summarized as below—the insect overwinters as nymph, emerges in the end of May to June, lives in “Ezomatsu”, *Picea jezoensis* and “Todomatsu”, *Abies sachalinensis* throughout the year, and walks up and down under the bark or in the galleries of Scolytid beetles. Adults are predaceous upon the beetles in adult, nymphs upon them in larva or pupa, some of prey are “Yatsuba-Kikuimushi”, *Ips typographus*, “Todomatsu-Kikuimushi”, *Polygraphus proximus*, “Ezo-Kikuimushi”, *Polygraphus jezoensis*, etc.

Genus *Lasiophiloides* CHAMPION, 1900 (Lyctocorinae)

Four species of this tropicopolitan genus have been known, *L. denticulatus* CHAMPION from Central America, *L. socialis* DRAKE et HARRIS from Mexico, *L. africanus* CARAYON from tropical Africa and *L. pleneti* CARAYON from Mascarene Archipelago, north of Madagascar. On the Asiatic representative, there is only one reference by CARAYON. He (1958) said “Tonkin où il est représenté par une espèce très voisine sinon identique à *L. pleneti*”. The following one new species from Ryukyu and Formosa will be added to the Asiatic fauna.

Lasiophiloides esakii sp. nov. (figs. 5, 6C)

“Esaki-Togeashi-Hanakamemushi”

Colour: Brown. Central area of hemielytra, last three segments of antennae, last segment of rostrum, tip of femora, tip and base of tibiae and tarsi yellow, stramineous. Cuneus, posterior end of embolium and outer margin of clavus brown.

Structure: Body elongate and flattened, the upper surface poorly haired. Head broad and flattened, not columnar, levigated and shinig, as long as wide including both eyes (60:60) (measured in 1/120 mm.), and much broader than long in middle excepting neck area (60:45). Eyes prominent, inner margins radiate forwards, posterior margins radiate postero-laterally, post-ocular area broad. Antennae slender, the first segment thickened, slightly surpassing the apex of head; the second thickened towards the apex; last two segments slender, proportions are I:II:III:IV = 22:62:35:39. Rostrum stout, last segment slender; the second not reaching the anterior end of eye, the third reaching the anterior margin of prothorax, the last just reaching the front coxae; proportions are I:II:III:IV = 17:24:51:39.

Pronotum horizontal, shining, with median, longitudinal, shallow groove on the anterior $3/5$; posterior $2/5$ depressed and transversely strigose; anterior margin a little curved, collar narrow and obsolete; posterior margin of the pronotal disc curved, broader than twice the length of anterior margin (100:41); lateral margins straight and narrowed forwards, the anterior apex rounded inwards. Anterior $2/5$ of scutellum levigated and shining, posterior $3/5$ mat, boundary between both areas distinct and straight.

Hemelytra levigated, outer $1/3$ of clavus, outer margin of embolium and cuneus, posterior half of corium haired poorly; embolium narrow, shorter than twice the length of cuneus (115:70). Membrane with one visible vein; tip and margins of abdomen exposed. Hind wings with a long distinct hamus in cell. Fore femora broadly thickened, with spines (7 to 9) beneath (fig. 5). Middle femora moderate, hind femora a little thickened, both pairs without armature. Evaporating area of scent-gland of banana-shape, curved forwards.

Length, 3.0-3.5 mm.; width, 0.9 mm.

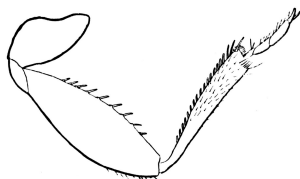


Fig. 5 Fore leg of *Lasiophiloides esakii* HIURA, n. sp.

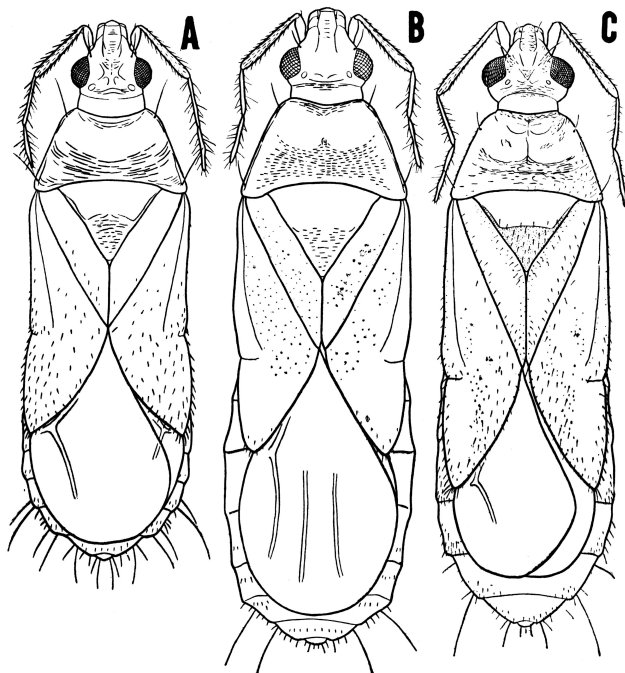


Fig. 6 Female of *Scoloposcelis* and *Lasiophiloides*.

Fig. A *Scoloposcelis parallelus* MOTSCHULSKY. Fig. B *Scoloposcelis nigriscens* HARADA. Fig. C *Lasiophiloides esakii* HIURA, n. sp.

Holotype ♂, Allotopotype ♀, Paratopotypes 35 exs., Kametsu-vil., Tokunoshima, Amami Group, Ryukyu, xi. 1935, T. TAMOTSU leg. Paratype ♀, Taihoku, North Formosa, 8. ix. 1932, T. ESAKI leg. All of the type specimens are preserved in the Entomological Laboratory of Kyushu University.

Habits:- Unknown. Specific name is dedicated to the late Professor Dr. T. ESAKI, who was the greatest hemipterist in Japan and brought a specimen of this new species to us. This species is rather closely allied to *Scoloposcelis*-species such as *S. parallelus* and *S. nigriscens* in appearance, but easily distinguished from them by the structure of head and fore leg. It is different from *L. pleneti* CARAYON in its longer and slenderer body, broader post-ocular area, distinct and straight boundary between two areas of scutellum and in structure of genitalia.

References * Can not read

- CARAYON, J. (1958): Quelques Hemipteres Anthocoridae des iles Mascareignes ;
Mém. Inst. Sci. Madagascar, Ser. E, vol. 9, pp. 335-348
- CHAMPION, G.C. (1900)*: *Biologia Centrali Americana, Rhynchota, II.* pp. 306-335
- DISTANT, W.L. (1904): *Rhynchotal Notes*, xxv.; *Ann. Mag. Nat. Hist.*, **14** (7) 219-220
- GROSS, F.G. (1957): A Revision of the Flower Bugs (Heteroptera Anthocoridae) of the Australian and Adjacent Pacific Regions, part III; *Rec. S. Australian Mus.*, **8** (1) 131-142
- HARADA, M. (1929): Ecological study on the Scolytid beetles injurious to *Picea jezoensis*. (in Japanese :- Ezomatsu Kisei Kikuimushi-rui no seitateki Kenkyu);
- HIURA, I. (1958): Two New Species of *Cardiastethus* from Japan, *Ent. Rev. Japan*, **9** (2) 38-40, pl. 7
- KIRKALDY, G.W. (1904): Bibliographical and Nomenclatorial Note on the Hemiptera, no. 3; *Entomologist*, **37**, pp. 279-283
- MATSUSHITA, M. (= HARADA, M.) (1943): Forest Entomology (in Japanese :- Shinrin Gaichû Gaku), Fuzambô, Tokyo
- POPPIUS, B. (1909): Beitrage zur Kenntnis der Anthocoriden : *Act. Soc. Sci. Fennicae*, **37** (9) 25-27
- REUTER, O. M. (1871): Acanthiidae americanae descriptae; *Öfv. Vet. Ak. Forh.* **5**, pp. 557-568
- (1884): Monographia Anthocoridarum orbis terrestris; *Act. Soc. Sci. Fennicae*, **14**, pp. 557-758
- STÅL, C. (1858)*: *Rio Jan. Hem.*, **44**, 3
- TAMANUKI, K. (1940): On the Scolytid beetles injurious to *Picea jezoensis* and *Abies sachalinensis* in southern Saghalien, (in Japanese:-Minami-Karafuto ni okeru Ezomatsu Todomatsu no Kikuimushi-rui ni tsuite);
- ZIMMERMAN, E.C. (1949): *Insects of Hawaii*, Vol. 3, Heteroptera

Holotype ♂, Allotopotype ♀, Paratopotypes 35 exs., Kametsu-vil., Tokunoshima, Amami Group, Ryukyu, xi. 1935, T. TAMOTSU leg. Paratype ♀, Taihoku, North Formosa, 8. ix. 1932, T. ESAKI leg. All of the type specimens are preserved in the Entomological Laboratory of Kyushu University.

Habits.:- Unknown. Specific name is dedicated to the late Professor Dr. T. ESAKI, who was the greatest hemipterist in Japan and brought a specimen of this new species to us. This species is rather closely allied to *Scoloposcelis*-species such as *S. parallelus* and *S. nigriscens* in appearance, but easily distinguished from them by the structure of head and fore leg. It is different from *L. pleneti* CARAYON in its longer and slenderer body, broader post-ocular area, distinct and straight boundary between two areas of scutellum and in structure of genitalia.

References * Can not read

- CARAYON, J. (1958): Quelques Hemipteres Anthocoridae des iles Mascareignes ;
Mém. Inst. Sci. Madagascar, Ser. E, vol. 9, pp. 335-348
- CHAMPION, G.C. (1900)*: *Biologia Centrali Americana, Rhynchota, II.* pp. 306-335
- DISTANT, W.L. (1904): *Rhynchotal Notes*, xxv.; *Ann. Mag. Nat. Hist.*, **14** (7) 219-220
- GROSS, F.G. (1957): A Revision of the Flower Bugs (Heteroptera Anthocoridae) of the Australian and Adjacent Pacific Regions, part III; *Rec. S. Australian Mus.*, **8** (1) 131-142
- HARADA, M. (1929): Ecological study on the Scolytid beetles injurious to *Picea jezoensis*. (in Japanese :- Ezomatsu Kisei Kikuimushi-rui no seitateki Kenkyu);
- HIURA, I. (1958): Two New Species of *Cardiastethus* from Japan, *Ent. Rev. Japan*, **9** (2) 38-40, pl. 7
- KIRKALDY, G.W. (1904): Bibliographical and Nomenclatorial Note on the Hemiptera, no. 3; *Entomologist*, **37**, pp. 279-283
- MATSUSHITA, M. (= HARADA, M.) (1943): Forest Entomology (in Japanese :- Shinrin Gaichû Gaku), Fuzambô, Tokyo
- POPPIUS, B. (1909): Beitrage zur Kenntnis der Anthocoriden : *Act. Soc. Sci. Fennicae*, **37** (9) 25-27
- REUTER, O. M. (1871): Acanthiidae americanae descriptae; *Öfv. Vet. Ak. Forh.* **5**, pp. 557-568
- (1884): Monographia Anthocoridarum orbis terrestris; *Act. Soc. Sci. Fennicae*, **14**, pp. 557-758
- STÅL, C. (1858)*: *Rio Jan. Hem.*, **44**, 3
- TAMANUKI, K. (1940): On the Scolytid beetles injurious to *Picea jezoensis* and *Abies sachalinensis* in southern Saghalien, (in Japanese:-Minami-Karafuto ni okeru Ezomatsu Todomatsu no Kikuimushi-rui ni tsuite);
- ZIMMERMAN, E.C. (1949): *Insects of Hawaii*, Vol. 3, Heteroptera